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EFFECT OF HYDROGEN SULFIDE ON THE OXIDATION PROCESSES

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The authors studied the intensity of the oxygen consumption, glycolysis, and speed of dehydration in the liver, muscles, and brain of rats subjected to the inhalation for one hour of hydrogen sulfide of a concentration of 0.3-1 milligram per liter. All of these readings were made on each animal at the same time. Determinations on control animals were made for each test and the test data were expressed in percent of the norm. Immediately after the completion of the hour of exposure, the majority of these cases not only indicated a drop in the consumption of oxygen, but also a reduction in the intensity of glycolysis and speed of dehydration. When sodium succinate was added as a hydrogen donator, the speed of dehydration in the muscles was reduced more sharply than in cases of dehydration of its natural hydrogen donators. However, one hour after the exposure, the intensity of the processes of dehydration and glycolysis exceeded the norm by a considerable amount although the oxygen respiration of the muscles remained reduced.

In nearly all the cases, the liver indicated a reduction in the quantity of oxygen consumed and at the same time an obvious intensification of glycolysis and dehydration. The consumption of oxygen in the brain was somewhat lower in some of the animals, while in others there was a significantly higher norm. The speed of dehydration in the greater number of cases increased or remained normal, and only in about one third of the cases was it reduced, and then moderately. The processes of glycolysis were intensified in nearly all cases.

As for the part of the intensity of oxidation processes in the brain in both the mild and severe cases of poisoning, it was found that both the aerobic and anaerobic phases of respiration proceeded less energetically in the milder cases.

The authors came to the conclusion that in poisoning by hydrogen sulfide, both aerobic and anaerobic respiration are affected. The aerobic processes

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